

**IPMAT**  
**INDORE 2024**  
**OFFICIAL PAPER**

## QUANTITATIVE ABILITY - (SA)

Questions: 15 (+4/0)

Total Test time: 40 mins

1. The number of factors of 1800 that are multiple of 6 is \_\_\_\_\_
2. The number of real solutions of the equation  $(x^2 - 15x + 55)^{x^2 - 5x + 6} = 1$  is \_\_\_\_\_
3. The following table shows the number of employees and their median age in eight companies located in a district.

Company	Number of employees	Median age
A	32	24
B	28	30
C	43	39
D	39	45
E	35	49
F	29	54
G	23	59
H	16	63

It is known that the age of all employees are integers. It is known that the age of every employee in A is strictly less than the age of every employee in B, the age of every employee in B is strictly less than the age of every employee in C..... the age of every employee in G is strictly less than the age of every employee in H.

The highest possible age of an employee of company A is \_\_\_\_\_

4. In a group of 150 students, 52 like tea, 48 like juice and 62 like coffee. If each student in the group likes at least one among tea, juice and coffee, then the maximum number of students that like more than one drink is \_\_\_\_\_
5. Let ABC be a triangle right-angled at B with  $AB = BC = 18$ . The area of largest rectangle that can be inscribed in this triangle and has B as one of the vertices is \_\_\_\_\_
6. A fruit seller has oranges, apples and bananas in the ratio 3: 6: 7. If the number of oranges is a multiple of both 5 and 6, then the minimum number of fruits the seller has is \_\_\_\_\_
7. The number of pairs  $(x, y)$  of integers satisfying the inequality  $|x - 5| + |y - 5| \leq 6$  is —
8. The price of a chocolate is increased by  $x\%$  and then reduced by  $x\%$ . The new price is 96.76% of the original price. Then  $x$  is \_\_\_\_\_
9. Let  $f$  and  $g$  be two functions defined by  $f(x) = |x + |x||$  and  $g(x) = \frac{1}{x}$  for  $x \neq 0$ . If  $f(a) + g(f(a)) = \frac{13}{6}$  for some real  $a$ , then the maximum possible value of  $f(g(a))$  is \_\_\_\_\_

10. The following table shows the number of employees and their median age in eight companies located in a district.

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in G is strictly less than the age of every employee in H.

The median age of an employee across the eight companies is \_\_\_\_\_

11. The following table shows the number of employees and their median age in eight companies located in a district.

Company	Number of employees	Median age
A	32	24
B	28	30
C	43	39
D	39	45
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It is known that the age of all employees are integers. It is known that the age of every employee in A is strictly less than the age of every employee in B , the age of every employee in B is strictly less than the age of every employee in C..... the age of every employee in G is strictly less than the age of every employee in H.

In company F , the lowest possible sum of the ages of all employees is \_\_\_\_\_

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12. If  $4^{\log_2 x} - 4x + 9^{\log_3 y} - 16y + 68 = 0$ , then  $y - x$  equals \_\_\_\_\_
13. Person A borrows Rs. 4000 from another person B for a duration of 4 years. He borrows a portion of it at 3% simple interest per annum, while the rest at 4% simple interest per annum. If B gets Rs. 520 as total interest, then the amount A borrowed at 3% per annum in Rs. is \_\_\_\_\_
14. The number of triangles with integer sides and with perimeter 15 is \_\_\_\_\_
15. If  $A = \begin{bmatrix} x_1 & x_2 & 7 \\ y_1 & y_2 & y_3 \\ z_1 & 8 & 3 \end{bmatrix}$  is a matrix such that the sum of all three elements along any row, column or diagonal are equal to each other, then the value of determinant of A is \_\_\_\_\_

## QUANTITATIVE ABILITY (MCQ)

Questions: 30 (+4/-1)

Total Test time: 40 mins

16. The angle of elevation of the top of a pole from a point A on the ground is  $30^\circ$ . The angle of elevation changes to  $45^\circ$ , after moving 20 metres towards the base of the pole. Then the height of the pole, in metres, is
- (a) 30 (b)  $15(\sqrt{5} + 1)$   
(c)  $20(\sqrt{3} + 1)$  (d)  $10(\sqrt{3} + 1)$
17. If  $|x + 1| + (y + 2)^2 = 0$  and  $ax - 3ay = 1$ , then the value of a is
- (a)  $\frac{1}{5}$  (b)  $\frac{1}{2}$   
(c)  $\frac{1}{7}$  (d) 2
18. If  $\log_4 x = a$  and  $\log_{25} x = b$  then  $\log_x 10$  is
- (a)  $\frac{a+b}{2(a-b)}$  (b)  $\frac{a+b}{2}$   
(c)  $\frac{a+b}{2ab}$  (d)  $\frac{a-b}{2ab}$
19. Let ABC be an equilateral triangle, with each side of length k. If a circle is drawn with diameter AB, then the area of the portion of the triangle lying inside the circle is
- (a)  $(3\sqrt{3} + \pi) \left(\frac{k^2}{6}\right)$  (b)  $(3\sqrt{3} - \pi) \left(\frac{k^2}{24}\right)$   
(c)  $(3\sqrt{3} + \pi) \left(\frac{k^2}{24}\right)$  (d)  $(3\sqrt{3} - \pi) \left(\frac{k^2}{6}\right)$
20. Let ABC be a triangle with  $AB = AC$  and D be a point on BC such that  $\angle BAD = 30^\circ$ . If E is a point on AC such that  $AD \perp AE$ , then  $\angle CDE$  equals
- (a)  $15^\circ$  (b)  $60^\circ$   
(c)  $30^\circ$  (d)  $10^\circ$
21. If 5 boys and 3 girls randomly sit around a circular table, the probability that there will be at least one boy sitting between any two girls, is
- (a)  $\frac{2}{7}$  (b)  $\frac{1}{7}$   
(c)  $\frac{1}{4}$  (d)  $\frac{1}{3}$
22. The side AB of a triangle ABC is c. The median BD is of length k. If  $\angle BDA = \theta < 90^\circ$ , then the area of triangle ABC is
- (a)  $\frac{k^2 \cos 2\theta}{2} + k \sin \theta \sqrt{c^2 - k^2 \cos^2 \theta}$  (b)  $\frac{k^2 \sin 2\theta}{2} + k \sin \theta \sqrt{c^2 - k^2 \sin^2 \theta}$   
(c)  $\frac{k^2 \cos \theta}{4} - k \sin \theta \sqrt{c^2 + k^2 \sin^2 \theta}$  (d)  $\frac{k^2 \cos 2\theta}{4} + k \sin \theta \sqrt{c^2 - k^2 \sin^2 \theta}$
23. Let  $a = \frac{(\log_7 4)(\log_7 5 - \log_7 2)}{(\log_7 25)(\log_7 8 - \log_7 4)}$ . Then the value of  $5^a$  is
- (a)  $\frac{7}{2}$  (b) 5  
(c) 8 (d)  $\frac{5}{2}$

24. For some non-zero real values of  $a$ ,  $b$  and  $c$ , it is given that  $\left|\frac{c}{a}\right| = 4$ ,  $\left|\frac{a}{b}\right| = \frac{1}{3}$  and  $\frac{b}{c} = -\frac{3}{4}$ . If  $ac > 0$ , then  $\left(\frac{b+c}{a}\right)$  equals  
 (a) 7 (b) -7  
 (c) -1 (d) 1
25. The difference between the maximum real root and the minimum real root of the equation  $(x^2 - 5)^4 + (x^2 - 7)^4 = 16$  is  
 (a)  $2\sqrt{5}$  (b)  $2\sqrt{7}$   
 (c)  $\sqrt{7}$  (d)  $\sqrt{10}$
26. If  $\theta$  is the angle between the pair of tangents drawn from the point  $A\left(0, \frac{7}{2}\right)$  to the circle  $x^2 + y^2 - 14x + 16y + 88 = 0$ , then  $\tan \theta$  equals  
 (a)  $\frac{5}{4}$  (b)  $\frac{20}{21}$   
 (c)  $\frac{2}{5}$  (d)  $\frac{4}{5}$
27. The numbers  $2^{2024}$  and  $5^{2024}$  are expanded and their digits are written out consecutively on one page. The total number of digits written on the page is  
 (a) 1987 (b) 2025  
 (c) 2065 (d) 2000
28. A boat goes 96 km upstream in 8 hours and covers the same distance moving downstream in 6 hours. On the next day boat starts from point A, goes downstream for 1 hour, then upstream for 1 hour and repeats this four more time that is, 5 upstream and 5 downstream journeys. Then the boat would be  
 (a) 22.5 km downstream of A (b) 15 km downstream of A  
 (c) 12.5 km downstream of A (d) 20 km downstream of A
29. If the shortest distance of a given point to a given circle is 4 cm and the longest distance is 9 cm, then the radius of the circle is  
 (a) 2.5 cm or 6.5 cm (b) 6.5 cm  
 (c) 5 cm or 13 cm (d) 2.5 cm
30. In a survey of 500 people, it was found that 250 owned a 4-wheeler but not a 2-wheeler, 100 owned a 2-wheeler but not a 4-wheeler, and 100 owned neither a 4-wheeler nor a 2-wheeler. Then the number of people who owned both is  
 (a) 75 (b) 60  
 (c) 50 (d) 100
31. The sum of a given infinite geometric progression is 80 and the sum of its first two terms is 35. Then the value of  $n$  for which the sum of its first  $n$  terms is closest to 100, is  
 (a) 6 (b) 5  
 (c) 7 (d) 4
32. Let  $n$  be the number of ways in which 20 identical balloons can be distributed among 5 girls and 3 boys such that everyone gets at least one balloon and no girl gets fewer balloons than a boy does. Then  
 (a)  $8000 \leq n < 9000$  (b)  $7000 \leq n < 8000$   
 (c)  $9000 \leq n < 10000$  (d)  $6000 \leq n < 7000$

33. The greatest number among  $2^{300}, 3^{200}, 4^{100}, 2^{100} + 3^{100}$  is  
 (a)  $3^{200}$  (b)  $2^{100} + 3^{100}$   
 (c)  $4^{100}$  (d)  $2^{300}$
34. The number of values of  $x$  for which  $C_{3x+}^{17-x}$  is defined as an integer is  
 (a) 5 (b) 6  
 (c) 2 (d) 4
35. The number of solutions of the equation  $x_1 + x_2 + x_3 + x_4 = 50$ , where  $x_1, x_2, x_3, x_4$  are integers with  $x_1 \geq 1, x_2 \geq 2, x_3 \geq 0, x_4 \geq 0$  is  
 (a) 19600 (b) 19200  
 (c) 20200 (d) 18400
36. Sagarika divides her savings of 10000 rupees to invest across two schemes A and B. Scheme A offers an interest rate of 10% per annum, compounded halfyearly, while scheme B offers a simple interest rate of 12% per annum. If at the end of first year, the value of her investment in scheme B exceeds the value of her investment in scheme A by 2310 rupees, then the total interest, in rupees, earned by Sagarika during the first year of investment is  
 (a) 1100 (b) 1130  
 (c) 1111 (d) 1000
37. A fruit seller had a certain number of apples, bananas and oranges at the start of the day. The number of bananas was 10 more than the number of apples, and the total number of bananas and apples was a multiple of 11. She was able to sell 70% of apples, 60% of bananas, and 50% of oranges during the day. If she was able to sell 55% of the fruits she had at the start of the day, then the minimum number of oranges she had at the start of the day was  
 (a) 220 (b) 190  
 (c) 210 (d) 180
38. The terms of a geometric progression are real and positive. If the  $p^{\text{th}}$  term of the progression is  $q$  and the  $q^{\text{th}}$  term is  $p$ , then the logarithm of the first term is  
 (a)  $\frac{(1-q)\log(p)-(1-p)\log(q)}{(p-q)}$  (b)  $\frac{(1-q)\log(p)+(1-p)\log(q)}{(p-q)}$   
 (c)  $\frac{(1-q)\log(q)+(1-p)\log(p)}{(p-q)}$  (d)  $\frac{(1-q)\log(q)-(1-p)\log(p)}{(p-q)}$
39. The number of real solutions of the equation  $x^2 - 10|x| - 56 = 0$  is  
 (a) 3 (b) 4  
 (c) 2 (d) 1
40. The smallest possible number of students in a class if the girls in the class are less than 50% but more than 48% is  
 (a) 25 (b) 100  
 (c) 27 (d) 200

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Direction (Q.41-Q.45): In an election there were five constituencies S1, S2, S3, S4 and S5 with 20 voters each all of whom voted. Three parties A, B and C contested the elections.

The party that gets maximum number of votes in a constituency wins that seat. In every constituency there was a clear winner. The following additional information is available:

- Total number of votes obtained by A, B and C across all constituencies are 49, 35 and 16 respectively.
- S2 and S3 were won by C while A won only S1.
- Number of votes obtained by B in S1, S2, S3, S4 and S5 are distinct natural numbers in increasing order.

41. The constituency in which B got lower number of votes compared to A and C is  
(a) S4 (b) S1  
(c) S3 (d) S2
42. The number of votes obtained by B in S 2 is  
(a) 5 (b) 7  
(c) 4 (d) 6
43. Assume that A and C had formed an alliance and any voter who voted for either A or C would have voted for this alliance. Then the number of seats this alliance would have won is  
(a) 3 (b) 4  
(c) 5 (d) 2
44. The number of votes obtained by A in S 5 is  
(a) 7 (b) 9  
(c) 6 (d) 8
45. Comparing the number votes obtained by A across different constituencies, the lowest number of votes were in constituency  
(a) S 2 (b) S 5  
(c) S 3 (d) S 4

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## VERBAL ABILITY AND READING COMPREHENSION

Questions: 45 (+4/-1)

Total Test time: 40 mins

**Directions: (Q.46-Q.51):** Read the following passage and choose the answer that is closest to each of the questions that are based on the passage.

Recently, India was in the news again as a world leader but this time for the wrong reason. According to the Swiss firm IQAir's assessment of the air quality of world cities 2023, New Delhi is back to being the world's most polluted capital. New Delhi's annual air quality rating is 19 times the World Health Organization's annual limit recommended in 2021 for its pollutant level. The picture is no better as far as the larger Union Territory of Delhi is considered - its annual record of pollutant levels makes it the third most polluted region globally.

Delhi may have hogged the headlines on air pollution, but the problem is far from unique to metropolises. IQAir's findings reveal that even lower-tier cities and towns in India are choking because of very poor air quality. Indeed, Begusarai in Bihar is the world's most polluted city. Partly industrialized, housing among others an oil refinery, Begusarai is primarily agrarian. And Begusarai is not an outlier: Mullanpur in Punjab, which is transitioning to an urban settlement, and Siwan in Bihar are among the 42 Indian cities/towns that are among the 50 most polluted globally.

Many judicial pronouncements have upheld "the right to clean air" as a corollary to the fundamental right to life and pushed governments to act. But Delhi's bad air is despite the introduction of CNG in public transport and the building of a metro network in the early years of this decade, and in spite of the presence of a Graded Response Action Plan (GRAP) that kicks in when the air quality turns bad and becomes more stringent as the air quality worsens.

Improving air quality across Indian cities requires three fundamental changes. One, governments must turn to science to understand, measure, and monitor the problem. Two, they have to understand that the response will have to include behavioural changes and use a combination of incentives and penalties to achieve this. And three, clean air has to be seen as a common public good. To be sure, it is not just the responsibility of the Centre or a battle for courts to wage, but a fight that states and municipal governments have to be a part of. This is the battle for our future.

46. Based on the information in the passage, who has endorsed the right to clean air?
- (a) The government. (b) The courts.  
(c) The media. (d) Parliament.
47. In the last sentence of the passage, "This is the battle for our future", the writer is
- (a) projecting a bleak future for India. (b) being melodramatic.  
(c) being ambivalent. (d) emphasizing the need to fight for clean air.
48. Based on the information in the passage, which one of the following statements is correct?
- (a) The problem of air pollution is limited to the major cities in India.  
(b) The 50 most polluted cities in the world are in India.  
(c) Delhi's air quality is the poorest in the entire world.  
(d) Industrialization makes Begusarai the most polluted city in the world.
49. The first sentence in the passage mentions that India was in the news again as a world leader. What is the writer's intention in pointing this out?
- (a) To create confusion. (b) To be critical.  
(c) To be negative. (d) To be judgmental.

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50. Which of the following points is not made by the writer?
- (a) Governments at all levels should be involved in tackling the problem of air pollution.
  - (b) Clean air is the right of every consumer.
  - (c) Scientific methods are needed to address the problem of air pollution.
  - (d) Polluting behaviour should be punished.
51. The phrase "that kicks in" (para 3) means
- (a) gets rejected.
  - (b) gains importance.
  - (c) causes violence.
  - (d) comes into force.

**Directions: (Q.52-Q.57):** Read the following passage and choose the answer that is closest to each of the questions that are based on the passage.

Anxiety is an emotion that all people experience from time to time, and we do that for good reasons. It has been built into us; we have inherited it from our evolutionary past, because, in general, anxiety has a survival function. It kicks in whenever we sense danger - we freeze, we devote all of our attention to the danger, and our bodies react with a big release of adrenalin, an increase in blood flow to the muscles, getting us ready to run as fast as we can or fight as fiercely as we might.

Anxiety also helps us to focus on things when we have deadlines and, if someone is driving too fast when we cross the road, it helps us to jump out of the way quickly. So, there is nothing wrong with anxiety in general, and in fact, we would have difficulties if we did not experience it to some extent. However, it can get problematic if the danger is imagined rather than real, or is something that is exaggerated. In those cases, particularly if the perceived danger is out of proportion to the real danger, and it is persistent and disabling, then there is a danger of an anxiety disorder.

Scientists are looking at what role genes play in the development of these disorders and are also investigating the effects of environmental factors such as pollution, physical and psychological stress, and diet. Several parts of the brain are key actors in the production of fear and anxiety. Using brain imaging technology and neurochemical techniques, scientists have discovered that the amygdala plays a significant role in most anxiety disorders. By learning more about how the brain creates fear and anxiety, scientists may be able to devise better treatments for these disorders.

The first psychotherapy treatment that was shown to be effective was 'exposure therapy', which essentially encourages people in a graded way to go into their feared situations and stay in them for as long as they can and build their confidence that way. Another is 'group cognitive behaviour therapy', a talking therapy that helps people to understand the link between negative thoughts and mood and how altering their behaviour can enable them to manage anxiety and feel in control. There are, of course, drugs that can help people with anxiety, but medication will not cure an anxiety disorder, it can only help to keep it under control while the person receives psychotherapy.

There is plenty of evidence that exercise can help with anxiety problems. When stress affects the brain, with its many nerve connections, the rest of the body feels the impact as well. Exercise and other physical activity produce endorphins, which are chemicals in the brain that act as natural painkillers. Additionally, getting physically tired can help people fall asleep faster and have deeper, more relaxing sleep. As many people suffering from anxiety often have problems with insomnia, just the ability to get a good night's rest can change their perspectives.

Anxiety is a normal but highly subjective human emotion. While normal anxiety serves a beneficial and adaptive purpose, it can also become the cause of tremendous suffering for millions of people. It is important that people recognise excessive anxiety in themselves at the earliest, as treatment can be very successful. Leaving it untreated can be a misery.

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52. Which of the following best indicates the relationship between anxiety and survival?
- (a) Despite being inherited from our evolutionary past, anxiety frequently undermines survival as it is not an integral part of human nature.
  - (b) Anxiety is part of our evolutionary past, yet has limited relevance now as it does not significantly impact our chances of survival.
  - (c) Anxiety is ingrained within us due to our evolutionary heritage and generally serves to promote survival.
  - (d) Anxiety, an intrinsic part of human nature, often disrupts our ability to thrive by acting as an impediment to survival.
53. In what way might the relationship between exercise or physical activity and anxiety relief suggest a potential solution for individuals with anxiety disorders?
- (a) Physical activity serves as a temporary distraction from anxiety, but its long-term effects remain unclear.
  - (b) Exercise-induced endorphins facilitate cognitive behavioural therapy's effectiveness.
  - (c) Exercise may directly target the amygdala to reduce anxiety symptoms.
  - (d) Physical activity could enhance sleep quality, indirectly lessening anxiety symptoms.
54. In the passage, the information about anxiety treatments is organized in which of the following ways?
- (a) By comparing different types of anxiety disorders.
  - (b) By presenting contrasting viewpoints on the subject.
  - (c) By outlining the historical development of anxiety treatments.
  - (d) By discussing various treatment options and their effectiveness.
55. Based on the information in the passage, which of the following statements best describes the potential danger associated with anxiety disorder?
- (a) It is always indicative of an imagined danger rather than a real one.
  - (b) It is characterized by a persistent and exaggerated perception of danger.
  - (c) It occurs when the perceived danger is proportionate to the real danger.
  - (d) It primarily arises from genetic factors rather than environmental influences.
56. The passage is chiefly concerned with
- (a) investigating the physiological benefits of exercise on anxiety management.
  - (b) evaluating the effectiveness of psychotherapy and medication in treating anxiety.
  - (c) understanding the complex interplay between genetic and environmental factors in anxiety disorders.
  - (d) exploring the multifaceted nature of anxiety and its adaptive functions.
57. Based on the information in the passage, which one of the following statements is correct?
- (a) Regular exercise does little to alleviate anxiety symptoms and improve sleep quality.
  - (b) Exposure therapy encourages individuals to face their feared situations gradually.
  - (c) Cognitive behaviour therapy is the most preferred treatment for anxiety disorders.
  - (d) Medication is the first-line therapy and primary cure for anxiety disorders.

**Directions: (Q.58-Q.64)** Complete the following sentences by choosing the most appropriate word/phrase from the options given below.

58. My supervisor seemed to be in a bad mood because he \_\_\_\_ when I asked if I could leave an hour early.  
(a) ate my head (b) cut my voice  
(c) bit my head off (d) hit my ear off
59. In a circus where performers share dressing rooms, training spaces and work in a fast paced environment, the success of a show \_\_\_\_ fostering team-work and collaboration.  
(a) comes with (b) come along with  
(c) comes down to (d) comes about
60. Anil could not go to his friend's party, as he had fever and was \_\_\_\_ .  
(a) beneath the weather (b) under the weather  
(c) outside the weather (d) beside the weather
61. In his address to the candidates contesting the student council elections the Principal said, "If you want others to take you seriously then you must \_\_\_\_ on issues like gender bias and inclusivity."  
(a) rule the roost (b) walk the talk  
(c) read the lines (d) go around the bend
62. The students' picnic plans \_\_\_\_ when it started raining heavily in the morning.  
(a) dropped out (b) dropped off  
(c) fell through (d) fell behind
63. All the employees agreed that the new regulations had \_\_\_\_ positive changes in the workplace.  
(a) brought up (b) brought on  
(c) brought along (d) brought about
64. Sheila keeps interrupting Manohar when he is playing with his friends, but he \_\_\_\_ because she is his younger sister.  
(a) puts her off (b) puts up with her  
(c) puts along with her (d) puts her on

**Directions: (Q.65-Q.69):** In each of the following sentences, the incorrect part of the sentence is underlined. Choose an alternative from the four given options so that the sentence is rendered correct.

65. He is very careless and has loosed his keys all the time.  
(a) was losing his keys (b) is loosing his keys  
(c) loses his keys (d) has loses his keys
66. I had been having a headache, so I will not attend the meeting.  
(a) was having a headache (b) have a headache  
(c) used to have a headache (d) have headache

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67. The negotiations are unsuccessful, and the Boards' hopes to continuing talks on a future deal seems to be increasingly improbable.
- (a) Board's hopes to continuing talks on a future deal seem
  - (b) Boards' hopes to continued talks on a future deal seems
  - (c) Boards' hopes on continued talks on a future deal seem
  - (d) Board's hopes to continuing talks on a future deal seems
68. In my opinion, the psychological thrillers of Alfred Hitchcock, who is a master of suspense and horror, have more lasting impact than any other filmmaker in history.
- (a) are having more lasting impact than those of other filmmakers
  - (b) has had a more lasting impact than those of other filmmakers
  - (c) have had a more lasting impact than those of any other filmmaker
  - (d) had more lasting impact than any filmmaker
69. While the bustling city streets were filled with the cacophony of honking horns and chatter of pedestrians, the serene countryside, where time seemed to move at a slower pace, provide a welcome retreat for their seeking solace amidst the chaos of urban living.
- (a) provides a welcome retreat for them seeking solace
  - (b) provides a welcoming retreat for those seeking solace
  - (c) provided a welcome retreat for those seeking solace
  - (d) provided a welcoming retreat for who seek solace

**Directions: (Q.70-Q.73) :** Each of the paragraphs given below has a sentence missing which is indicated by a blank. From the choices given below each paragraph, choose the sentence that seems most logically appropriate to complete the paragraph.

70. Most artificial intelligence (AI) applications in the fields of healthcare, industry, finance, transportation, and writing, rely heavily on deep learning and natural language processing. However, while AI systems can mimic existing styles and patterns, there is an ongoing debate about whether AI can truly possess creativity in the same sense as humans. \_\_\_\_\_ .
- (a) Man has long feared the rise of the machine, his own creation becoming smarter and more intelligent than him
  - (b) AI-generated works may lack the depth, emotional connection, and unique perspectives that come with human experiences and emotions
  - (c) AI usage raises a number of ethical concerns such as privacy issues, bias in algorithms, and the potential misuse of AI in many applications
  - (d) High-performance computing has already proven a machine's ability to perform advanced calculations far faster and more accurately than the human mind
71. In an era where privacy and individualism are often prized above all else, Japanese architect Riken Yamamoto blurs the boundary between public and private. \_\_\_\_\_ . His work is a testament to the power of architecture to break down barriers and to foster a sense of community. Through his innovative designs, he challenges traditional notions of public and private spaces, seamlessly blending the two realms.

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- (a) He successfully integrates traditional Japanese aesthetics and modern design principles in his work  
(b) He was recently named the 2024 Laureate of the prestigious Pritzker Architecture Prize  
(c) In the world of architecture, he stands out as a visionary voice advocating a return to a more interconnected way of living  
(d) He is deeply committed to building harmonious societies through his architectural practice
72. The pursuit of a career in sports offers individuals opportunities for personal fulfilment and professional success \_\_\_\_\_. Athletes must therefore undergo rigorous training regimens to maintain peak physical condition and hone their skills. Additionally, competition in the sports industry is fierce, requiring dedication, perseverance, and mental resilience to succeed. Despite the challenges, successful athletes can enjoy lucrative contracts, endorsements, and global recognition for their achievements.
- (a) Sports careers are often short-lived due to the physical demands and risks of injury associated with athletic competition  
(b) Athletes often face pressure from coaches, sponsors, and fans to perform at their best, adding to the stress of professional sports  
(c) The sports industry encompasses a wide range of career paths, including coaching, sports management, and sports journalism  
(d) Many athletes choose to pursue higher education alongside their sports careers to ensure long-term stability and success
73. \_\_\_\_\_. This happened after a lorry laden with tomatoes worth 21 lakh rupees went missing. One of the three traders who had sent his tomatoes on the lorry said that they had lost contact with the driver in Nashik and that his GPS had been switched off. The traders were not sure if the truck had been hijacked or if the driver had stolen the tomatoes. This is the third time tomatoes have been stolen following the rise of tomato prices to Rs. 150 per kg.
- (a) Nashik overtook Kolar as the biggest tomato market in Asia  
(b) Panic and confusion reigned among traders in the Kolar agricultural produce market  
(c) A couple took the hijacked vehicle to a nearby market and sold the tomatoes there  
(d) Three traders jointly hired a lorry to carry tomatoes

**Direction: (Q.74-Q.79)** Some of the sentences below have words that are missing. Choose the best option from those given below to complete them.

74. An \_\_\_\_\_ found that one of the marathon runners had \_\_\_\_\_ slowed down in the last two kilometres and after \_\_\_\_\_ to the one behind him had let him cross the finish line just one second before he did.
- (a) analysis; systematically; waving  
(b) overview; purposely; beckoning  
(c) investigation; deliberately; signalling  
(d) appraisal; particularly; speaking
75. The outbreak of COVID-19 resulted in a health crisis and a drop in economic activity that were without \_\_\_\_\_ in history. While containing and \_\_\_\_\_ the spread of the virus was the first priority of public authorities, reducing the \_\_\_\_\_ of the disease and limiting the pressure on healthcare systems were also considered equally important.
- (a) similarity; combating; prevalence  
(b) precedent; mitigating; incidence  
(c) equivalent; eradicating; toll  
(d) parallel; controlling; outbreak

76. In today's fast-paced world, individuals are inundated with information, necessitating the cultivation of critical thinking skills in order to navigate the influx of data \_\_\_\_\_.  
Additionally, the prevalence of fake news and misinformation presents a \_\_\_\_\_ challenge, undermining people's trust in media and institutions. Promoting media literacy and cultivating a culture of scepticism are vital for \_\_\_\_\_ informed citizenship and democratic values.
- (a) judiciously; systematic; inhibiting (b) discerningly; pervasive; fostering  
(c) discreetly; global; serving (d) thoughtfully; holistic; furthering
77. Conspiracy theorists suggest that if climate change is slowly turning the planet into an oven, then this must have been the outcome of our enemies' intentional \_\_\_\_\_. If there are no coincidences in the world, then everything, including \_\_\_\_\_ events, can be controlled. It is only a matter of power and \_\_\_\_\_.
- (a) machinations; outstanding; determination (b) errors; indescribable; information  
(c) plotting; catastrophic; prowess (d) inaction; advantageous; performance
78. It is widely argued that social media can benefit aspiring \_\_\_\_\_. Populists in particular latch on to social media today as a way to connect directly with people, \_\_\_\_\_ restraints on their behaviour that political parties would have provided in the preinternet age. They can also profit from echo chambers, which reinforce the sense that a whole people \_\_\_\_\_ supports a populist leader.
- (a) autocrats; bypassing; uniformly (b) entrepreneurs; enforcing; presumably  
(c) anarchists; unscrupulous; unanimously (d) democrats; avoiding; surprisingly
79. In an era of globalization, cultural diversity is celebrated and valued across societies. However, the rise of xenophobia and intolerance poses a \_\_\_\_\_ challenge to social cohesion and harmony. Building inclusive communities and promoting intercultural dialogue are essential for \_\_\_\_\_ mutual understanding and respect among diverse populations. Additionally, educating individuals about the benefits of cultural diversity and challenging \_\_\_\_\_ are crucial steps toward creating inclusive societies and encouraging peaceful coexistence.
- (a) complicated; advancing; truisms (b) multi-faceted; stimulating; archetypes  
(c) pressing; nurturing; stereotypes (d) sophisticated; expediting; propositions
80. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) When it is not too thick, the callus protects the foot from damage.  
(b) A build-up of the callus is one of the most common causes of discomfort.  
(c) He received fifty lashes on his feet delivered with callus indifference.  
(d) The doctor examined the callus but neglected to treat it
81. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) He used a fan to diffuse the smoke that had accumulated in the kitchen while cooking.  
(b) Every morning, the aroma of freshly baked bread diffuses throughout the house, enticing everyone to the kitchen.  
(c) Realising that the argument between the two groups of students was getting out of control, the teacher diffused the situation by quickly changing the topic.  
(d) The stained glass diffused the light filtering through the windows.

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82. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) Bans provide the community a chance to raise objections and ensure transparency.
  - (b) Organic farming bans the usage of all pesticides and involves manual weeding.
  - (c) The government bans anyone with irregularities in their passports from travelling abroad.
  - (d) The Child Marriage Restraint Act bans the marriage of those who are below 18 years of age.
83. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) During her summer holidays she usually went to the village to stay with her grandparents and her large extended family.
  - (b) She said, "I always stay awake late into the night till my daughters come home, as I worry a lot about their safety."
  - (c) The ownership of the property went to the eldest son of the family, but the other siblings went to court and asked for a stay order.
  - (d) Due to the ban on slaughter of cattle, the neglected ones often stay away, wandering into fields and eating the crops.
84. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) The rules of the organization proscribes members from engaging in conflicts of interest.
  - (b) The coach proscribes late night parties before an important game.
  - (c) The company's policy proscribes employees from disclosing confidential information to unauthorized individuals.
  - (d) The software manual proscribes step-by-step instructions for installing and configuring the program.
85. One of the statements below contains a word used incorrectly or inappropriately. Choose the option which has the incorrect or inappropriate usage of the word.
- (a) The sound of laughter and loud music from the neighbour's house disturbed his train of thought as he was writing his farewell speech.
  - (b) If you really want to see the landscape and the scenic countryside, it is better to take a train or go by road, rather than by plane.
  - (c) By following the train of blood on the platform the police located the body of a young woman who had been brutally stabbed.
  - (d) My friend has picked up a stray dog from the street and is now looking for somebody to train and domesticate the animal.
86. The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the most logical order and enter the sequence of numbers in the space provided. Only numbers are to be entered in the space provided for the answer, and no letters, characters, or spaces should be entered. For example, a response such as 53412 is valid, and responses such as 53412. or 53412 are invalid.
- 1. By contrast, in America, it is estimated that even after post-COVID decline, total giving came to almost \$500 billion in 2022.
  - 2. There are no comparable data on different countries. But one report by Dasra, a Mumbai-based NGO, estimates total private giving in India came to about \$ 13 billion in 2022.
  - 3. A strategic sort of giving, involving philanthropy professionals, a long-term lens, and big ambitions of transforming society is gradually emerging. It differs, of course, between countries.

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4. Researchers at the Chinese Academy of Social Sciences, put total giving in China at \$21 billion in 2020.
5. By any measure, however, organised philanthropy across Asia is on a much smaller scale than in the West.
87. The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the most logical order and enter the sequence of numbers in the space provided. Only numbers are to be entered in the space provided for the answer, and no letters, characters, or spaces should be entered. For example, a response such as 3412 is valid, and responses such as 3412 . or 3412 are invalid.
1. Farmers, however, especially during the peak farming season, ignore the warnings of the weather forecast.
  2. People from some states of India have demanded that families of those who have been killed by lightning strikes should receive compensation.
  3. The Minister for Disaster Management announced that over 2800 people have died after being struck by a lightning last year.
  4. The Minister responded that pamphlets on the dangers of lightning and precautions to be taken are being distributed in villages.
88. The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the most logical order and enter the sequence of numbers in the space provided. Only numbers are to be entered in the space provided for the answer, and no letters, characters, or spaces should be entered. For example, a response such as 53412 is valid, and responses such as 53412. or 53412 are invalid.
1. Meanwhile, people are posting less. The share of Americans who say they enjoy documenting their life online has fallen from 40 per cent to 28 per cent since 2020.
  2. The striking feature of the new social media is that they are no longer very social.
  3. Some of the consequences of this are welcome. Political campaigners say they have to tone down their message to win over private groups.
  4. Debate is moving to closed platforms such as WhatsApp and Telegram.
  5. Inspired by TikTok, apps like Facebook increasingly serve a diet of clips selected by artificial intelligence according to a user's viewing behaviour, not their social connections.
89. The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the most logical order and enter the sequence of numbers in the space provided. Only numbers are to be entered in the space provided for the answer, and no letters, characters, or spaces should be entered. For example, a response such as 3412 is valid, and responses such as 3412 . or 3412 are invalid.
1. In this microgravity environment, your blood also tends to move towards the heart and head.
  2. Both effects are only short-lived and, after a brief period of readjustment on arriving back home, the heart and spine return to normal.
  3. The heart interprets this as an increase in the amount of blood in the body and that it needs to pump less, so it shrinks.
  4. In space with less gravitational force than on Earth, there's less pressure on your spine and so it'll get a bit longer, effectively making you as much as two inches taller.
90. The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the most logical order and enter the sequence of numbers in the space provided. Only numbers are to be entered in the space provided for the answer, and no letters, characters, or spaces should be entered. For example, a response such as 3412 is valid, and responses such as 3412 . or 3412 are invalid.

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1. The muddy concoction - made by grinding the kava plant's roots and mixing it with water to create a dark, earthy liquid - holds a deep cultural significance throughout the region, and the drink is often shared between friends, guests, and colleagues.
  2. Regular kava drinkers often describe this blissful state as a sort of peace, a way for the body and mind to uncoil from itself.
  3. Called yaqona in Fiji, 'ava in Samoa and sakau in Micronesia, kava has occupied a sacred role in Pacific countries for centuries.
  4. A swig (or two) taken from a bowl or shell sometimes quite literally a coconut shell cut in half can lead to profound relaxation, a sort of numbness that trickles down from your mouth through your shoulders and spine.

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## ANSWER KEY

1. **Answer: 18**
2. **Answer: 6**
3. **Answer: 29**
4. **Answer: 12**
5. **Answer: 81**
6. **Answer: 160**
7. **Answer: 85**
8. **Answer: 18**
9. **Answer: 6**
10. **Answer: 45**
11. **Answer: 1510**
12. **Answer: 6**
13. **Answer: 3000**
14. **Answer: 7**
15. **Answer: 288**
16. **Answer: D**
17. **Answer: A**
18. **Answer: C**
19. **Answer: C**
20. **Answer: A**
21. **Answer: A**

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22. **Answer: B**
23. **Answer: D**
24. **Answer: D**
25. **Answer: B**
26. **Answer: B**
27. **Answer: B**
28. **Answer: D**
29. **Answer: A**
30. **Answer: C**
31. **Answer: B**
- 32.
33. **Answer: A**
34. **Answer: A**
35. **Answer: A**
36. **Answer: B**
37. **Answer: C**
38. **Answer: D**
39. **Answer: C**
40. **Answer: C**
41. **Answer: D**
42. **Answer: D**
43. **Answer: D**

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44. **Answer: D**
45. **Answer: C**
46. **Answer: B**
47. **Answer: D**
48. **Answer: D**
49. **Answer: B**
50. **Answer: B**
51. **Answer: D**
52. **Answer: C**
53. **Answer: D**
54. **Answer: D**
55. **Answer: B**
56. **Answer: D**
57. **Answer: B**
58. **Answer: C**
59. **Answer: C**
60. **Answer: B**
61. **Answer: B**
62. **Answer: C**
63. **Answer: D**
64. **Answer: B**
65. **Answer: C**

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66. **Answer: B**
67. **Answer: A**
68. **Answer: C**
69. **Answer: C**
70. **Answer: B**
71. **Answer: C**
72. **Answer: A**
73. **Answer: B**
74. **Answer: C**
75. **Answer: B**
76. **Answer: B**
77. **Answer: C**
78. **Answer: A**
79. **Answer: C**
80. **Answer: C**
81. **Answer: C**
82. **Answer: A**
83. **Answer: D**
84. **Answer: D**
85. **Answer: C**
86. **Answer: 32415**
87. **Answer: 3241**

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88. **Answer:** 25143

89. **Answer:** 4132

90. **Answer:** 3142